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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/767,668 | 01/29/2004 | Julian S. Crawford | 033583.00007 | 5426 |
| 7590 | 10/07/2005 | | EXAMINER | |
| McNair Law Firm, P.A. P.O. Box 10827 Greenville, SC 29603 | | | GRAY, JILL M | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1774 | |

DATE MAILED: 10/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/767,668 | CRAWFORD ET AL. | |
| | Examiner | Art Unit | |
| | Jill M. Gray | 1774 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 14 July 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-5, 10, 22 and 23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-4, 10, 22 and 23 is/are rejected.
- 7) Claim(s) 5 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

More specifically, these claims set forth improper Markush language. The suggested language is "selected from the group consisting of".

Response to Amendment

The rejection of claims 1-4, 6, and 9-10 under 35 U.S.C. 103(a) as being unpatentable over Igure et al, 6,710,242 B1 in view of Patel et al, 6,528,572 B1 is withdrawn in view of applicants' arguments.

The rejection of claims 1-12 under 35 U.S.C. 103(a) as being unpatentable over Hodan 5,840,425 in view of Patel et al, 6,582,572 B1 is moot in view of applicants' amendments.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-4, 10 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeAngelis et al, 6,855,421 B2 (DeAngelis) in view of Patel et al, 6,528,572 B1 (Patel).

DeAngelis teaches a yarn comprising a primary component and a secondary component, the primary component comprising a core yarn that can be monofilaments or multifilaments, i.e., at least one set elongated filament, and said secondary component can be a blend of a single polymeric material and electrical conductors such as conductive fibers that can be formed from carbon, whereby said secondary component is bonded with said primary component along its length, per claims 1, 10 and 22. See abstract, column 1, lines 49-59 and Figure 1. The polymeric material is of the type contemplated by applicants in claims 2 and 3, such as polyethylene, and the secondary component can be a sheath bonded with and surrounding the primary component, as required by claim 4. See column 1, lines 60-65 and column 2, lines 24-

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26. DeAngelis does not specifically teach that the conductive fibers are carbon nanotubes in an amount of up to .5% of the multi-component yarn.

Patel is as applied in the Office Action of April 20, 2005 and teaches conductive polymer compositions comprising polymeric resins and electrically conductive filler materials. These filler materials can be carbon fibers such as carbon nanotubes wherein the nanotubes can be used in amounts as low as 0.025 wt%. This teaching would have provided motivation to the skilled artisan to modify the teachings of DeAngelis by using carbon nanotubes instead of carbon black as the conductive filler, with the reasonable expectation of obtaining a conductive polymeric composition and fiber with minimal filler loading without sacrificing the mechanical properties of the resultant fiber. As to claim 23, DeAngelis is silent as to the amount of the sheath material present in said yarn. Nevertheless, it would have been obvious to determine and modify this amount during routine experimentation commensurate with the desired properties of the end yarn. For example, the amount of sheath material would be related to the desired resistivity of the end yarn.

Therefore, the combined teachings of DeAngelis and Patel would have rendered obvious the invention as claimed in present claims 1-4, 10, and 22-23.

Allowable Subject Matter

6. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

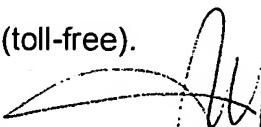
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7. Applicant's arguments with respect to claims 1-4, 10 and 22-23 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill M. Gray whose telephone number is 571-272-1524. The examiner can normally be reached on M-Th and alternate Fridays 10:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jill M. Gray
Examiner
Art Unit 1774

jmg